

**THE RAILWAY SUSPENSION BRIDGE OVER THE NIAGARA.**—This bridge will form a single span of 600 feet in length. It is to serve as a connecting line between the railways of Canada and the State of New-York. It is to be hung on cables of iron wire, as "the best material for the support of loads and compression, in virtue of its great absolute cohesion, which amounts to from 90,000 to 130,000 lbs. per square inch, according to quality." The bridge will form a straight hollow beam of 20 feet wide and 17 deep, composed of top, bottom, and sides. The upper floor, which supports the railway, is 24 feet wide between the railings, and suspended to two wide cables, assisted by stays. The lower floor is 19 feet wide and 15 high in the clear, connected with the upper one by vertical trusses, forming its sides, and suspended on two other cables, which have 10 feet more deflection than the upper ones. The anchorage will be formed by sinking eight shafts into the rock 25 feet deep. The bottom of each shaft will be enlarged for the reception of cast-iron anchor plates, of 6 feet square. These chambers will have a prismatic section, and be filled with solid masonry. Saddles of cast-iron will support the cables on the top of the towers. They will consist of two parts—the lower one stationary, and the upper one moveable, resting on wrought iron rollers. The saddles will have to support a pressure of 600 tons, whenever the bridge is loaded with a train of maximum weight. The towers are to be 60 feet high, 15 feet square at base and 8 at top. The lime-stone used in the masonry of the towers; it is said, will bear a pressure of 500 tons upon every foot square.

#### WEIGHT OF BRIDGE.

Weight of timber .. . . .	910,130 lbs.
Wrought iron and suspenders .. . . .	118,120
Castings .. . . .	44,332
Nails .. . . .	66,740
Cables between towers .. . . .	535,400

1,669,722

For the cables it is estimated that 16,000 wires of No. 10 will be required. At each end of the upper floor the upper cables will be assisted by 18 wire rope stays, and their strength will be equivalent to 1,440 wires; these deducted leave the number of wires in the four superior cables, 13,560; the number of wires in one cable, 3,390; diameter of cable, 9½ inches. The railway bridge will be elevated 18 feet on the Canadian, and 28 on the American side, above the present surface of the bank, and above the present structure.

**THE NEW HOUSE DUTY.**—A return to Parliament has just been issued, showing the number of houses valued at 20s. and upwards, the number of those which pay house-tax at sixpence and ninepence in the pound, with other information on the same subject. In England and Wales there are 179,224 houses charged at sixpence; and in Scotland, 6,377. The amount of duty in England and Wales is £200,182l. 19s. 2d.; and in Scotland, £268l. 11s. 2d.; making 208,417l. 10s. 11d. at sixpence; while at ninepence in the pound there are 252,213 houses in England and Wales producing 463,204l. 4s. 8d.; and in Scotland, 24,095 houses at 3s. 3d. 17s. 1d.; making the ninepence duty 501,545l. 1s. 9d. The total amount of duty is stated at 707,016l. 19s. 8d. The return, which was obtained by Mr. Goulburn, contains the number of houses in some of the principal towns rated at 10s. and other sums.

**PRESERVATION OF ARCHEOLOGICAL RELICS.**—A petition has been prepared by the Archeological Institute for presentation to Parliament on this subject. The memorial states, "That of late years numerous structures, both religious and civil, of great public interest, have been wantonly destroyed or defaced, owing to the want of some recognised power of interference in extreme cases. At the present moment, the interesting remains of the Roman theatre and ancient town of Verulamium are threatened with destruction by a building company. That, owing to the state of the law of treasure trove, a large number of precious objects of gold and silver, deserving of preservation, not only for the beauty and

skill displayed in their workmanship, but on account of their essential interest as illustrations of the arts and habits of former races, are condemned to the melting-pot as soon as discovered. That, in such cases, it is highly desirable that some change of the law should be made, so as to avert this destruction of valuable archeological evidences, without infringing on the sacred rights of property." The petition prays for a committee, to whom these matters may be submitted, or otherwise for relief, as may be deemed expedient.

**STOURBRIDGE SCHOOL OF DESIGN.**—The Government School of Design at Stourbridge was inaugurated on Monday in last week, by a *conversazione*, held in the School building, and at which the Lord Lieutenant, Lord Lyttelton, presided. There were upwards of 300 ladies and gentlemen present, and the walls were adorned with pictures and works of art supplied by the Government, and also by manufacturers and others residing in the town and neighborhood. The building comprises a library, supplied by Government, a room for private classes, and a general class room, with other conveniences. In responding to a vote of thanks, Mr. J. H. H. Foley, M.P. as chairman of the council, stated that it was estimated that from 2,000l. to 2,500l. would be wanted for the erection of a proper building, but that the subscriptions of the town and neighbourhood did not exceed 800l. After abandoning two or three sites because they could not afford to pay for them, an opportunity occurred of buying the theatre for 700l. and of altering it as it now is for 500l. more, including lighting and warming. The inside of the building, it had been pronounced by competent judges, would make one of the best schools in the country. Lord Ward and Lord Lyttelton also addressed the meeting.

**LEEDS SCHOOL OF DESIGN.**—The annual meeting of this school was held on Monday in week before last, when the proposals of the Government department of practical art as to the appointment of masterships of drawing schools from amongst the more advanced students in the local and central schools, as already announced in our columns, were reported to the meeting. A letter was also read from Mr. Deverill, secretary of the department, announcing the establishment of scholarships in the London school. The letter offered to the Leeds committee the privilege of recommending any advanced students who have received medals, and who may be desirous of becoming candidates for a scholarship, which will be given, subject to rules; the holder of it to receive an allowance at the rate of 40l. a year, from 1st October, 1862, to 31st March, 1863, when the candidate will be eligible for re-election. Another communication from the Board of Trade enjoined the formation of a permanent collection of drawings by the pupils to be used as a public exhibition. The report stated that there had been 146 pupils in the school during the year. The financial statement contained the following items of receipt. Donations toward paying off the debt, 128l. 2s. Subscriptions, 90l. 19s. 6d. Government grant, 200l. Pupils' fees and sundries, 63l. 12s. 8d. The expenditure included the payment of a debt of 179l. 5s. 8d. Salaries, rent, &c. 360l. 8s. 3d. Balance in hand, 17l. 11s. 11d.

**LEANING TOWERS OF LONDON.**—Time after time, when passing certain leaning towers (not of Pisan construction), imminent both to the passengers, not few, and dwellers within, gravity-tempting tenements, my wonder is heightened that no authoritative voice command "Take down the threateners." It may be that your province admits of the public and proprietors receiving kind warning from *THE BUILDER'S FANCIAS*. For specimens, the eye may contemplate the inclination of the wood columns yet bearing the extensive house-wall at the east end of Carey-street, north side; head of Gata-street, Lincoln's-inn-fields, the house that partially barricades Little Trenchard and the slight iron-climbing prope to the massive coin of well-built brick forming the south corner of Long-acre's east end.—*APPREHENSION.*

**THE NEW PALACE, BALMORAL.**—Sir, I perceive by the papers that it has been determined to build a new palace for the Queen at Balmoral, and that it is estimated to cost from 80,000l. to 100,000l. We have not yet heard the name of the fortunate architect who is to be employed, but no doubt from the feeling evinced both by Her Majesty and the Prince to encourage the arts and manufactures, &c. at the present time, that some distinguished architect will be employed, and as a palace it will vie with such undertakings as Bridgewater and Dorechester House, Park-lane, and on which men of eminence and taste have been engaged.—*A SUB.*

**PICCADILLY.**—To relieve the minds of some of our correspondents we may say that the huge covered enclosure in the road, near St. James's Church, is not intended as a permanent location for the paviors who have for so many weeks diverted the stream of traffic north and south, which ought to be running east and west nor is it for any travelling exhibition, or agricultural association. It is, in short, simply to protect a steam-engine which is cutting off the unsound part of the blocks that formed the wooden pavement, that they may be laid down again one of these days. When we are again to be permitted to take the straight course no one but "Vates," "Joe Muggins's Dog," or some other of the racing prophets, can possibly tell.

**ANOTHER ACCIDENT WITH A SCAFFOLDING.**—It is painful to have occasion, ever and anon, to record such cases, and indeed, they have occurred of late oftener than recorded. In the present instance, a scaffold, 30 feet in height, in front of some new buildings in Grafton-place, Kentish Town, gave way on Thursday, in last week, carrying the workmen with it, smashing the skull of one poor fellow, whose case is hopeless, and also nearly killing another. A third was caught by a projection, and, fortunately, rescued. Some better supervision of scaffolding would appear to be absolutely necessary.

**GLASS SASHES.**—Some years ago I proposed the employment of glass in the construction of sashes, and time has in no degree lessened my confidence in the results. These sashes of any and all colours would possess great beauty, elegance, and novelty, and I think they would bid fair to supersede every other description for shop fronts, &c. I make the above suggestion known to all; that some may be led to put it into practice.—*J. CLARKE.*

#### TENDERS

For the Shoreditch Agricultural Schools, to be erected at Shoreditch. The tenders of the parish of St. Leonard, Shoreditch, advertised some time since for design, and stipulated that the cost should not exceed 5,000l. The design of Mr. Knapp was selected, and he supplied the quantities for the Builders—

G. Myers .. . . .	£5,690 0 0
E. Carter .. . . .	5,657 0 0
Pollock and McLeoman .. . . .	5,597 0 0
J. and J. Coleman .. . . .	5,575 0 0
Keogh .. . . .	5,494 0 0
Hill .. . . .	5,456 0 0
Moss .. . . .	5,426 0 0
H. Smith .. . . .	5,230 0 0
W. Smith .. . . .	5,177 0 0
J. Wood and Son (accepted) .. . . .	4,913 0 0
J. and J. Bishop .. . . .	4,120 0 0

#### TO CORRESPONDENTS.

"Picture Frames."—The result of our inquiries is not favourable to the use of "gold varnish," or rather "gold paint." It will not last. It may be obtained at the oil-shops. The best mode of proceeding is to send the frames to a glazier.

"Noreluch" (a needle may be called "a wedge"), "J. B." Staffordshire (the previous "publication" of an invention prevents the obtaining of letters patent. As to protection, apply to a patent agent); "A. P." "W. M." (one write to the address given if he please. We cannot further interfere); "J. L." (involved, and will shortly appear); "A. E. G." "W. H." "K. D." "Mr. N." "W. W." "Dr. MacD." "B. B. O." "Occasional Reader." "F. W." "F. O. W." "Contractor's Foreman." "T. H. W." "W. H. O." "J. B." "J. C. D." "P. W." (It was not stated that the Designers for the Building would receive a copy of the Jurors' Reports), "J. T. K." (shall appear).

"Books and Addresses."—We have not time to point out books or find addresses.

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